

Patent
Attorney's Docket No. 154546/0341-073

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
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Marcello PUGGIONI et al.) Confirmation No.: 5190
)
Application No.: 10/572,170) Group Art Unit: 3745
)
Filed: January 2, 2007) Examiner: Dwayne J. White
)
For: HEAT EXCHANGER FOR)
CENTRIFUGAL COMPRESSOR)
GAS SEALING)

REPLY BRIEF PURSUANT TO 37 C.F.R § 41.41

Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

The present Reply Brief is in response to the Examiner's Answer of September 16, 2011. Appellants respectfully reiterate that the basis for the outstanding rejections is improper, and, therefore, the rejections should be REVERSED.

Independent claim 1 of the application is directed to a heat exchanger device for a gas seal in a centrifugal compressor including (1) a fluid heat exchanger positioned between the gas seal of the compressor and a housing wall of said seal, and (2) at least one inlet duct entering through the fluid heat exchanger and configured to supply a blockage gas to the gas seal, wherein the fluid heat exchanger is configured to keep the temperature of said seal low in the case of high temperatures of the wall and/or

compressed gas.

Appellants have vigorously argued in the appeal brief, that contrary to the Examiner's position, the fluid heat exchanger 18 of Lorenzen is not configured to modify the temperature of the seals 24-25, but it is configured to modify the temperature of the leakage flow in a ring space 31.

In his response the Examiner appears to aggregate the leakage flow with the Lorenzen's fluid heat exchanger, asserting that since the Lorenzen's heat exchanger changes the temperature of the leakage flow which then flows by the seals 24-25, it indirectly also changes the temperature of the seals 24-25. This aggregation is improper because a fluid flow is not a structural component of an apparatus.

The Examiner's rebuttal is ineffective also because it does not alleviate the structural difference between Lorenzen and the claimed inventions. Neither Lorenzen's fluid heat exchanger nor the leakage fluid is "**positioned between the gas seal of the compressor and a housing wall of said seal**" as recited in claim 1.

Moreover, the Examiner's rebuttal is technically incorrect because it ignores that the claim explicitly states that "**the fluid heat exchanger is configured to keep temperature of the seal low in the case of high temperature of [...] the compressed gas.**" In Lorenzen, the leakage gas flow cannot be the same time the cause of a temperature problem and the solution.

Without specifically referring to claim 2, the Examiner appears to respond to Appellants' arguments relative to claim 2 by asserting "while there may be a break in the circular path of the heating change (sic!) ring, this does not preclude the fact that the

ring is still circular" (see lines 9-11, on page 6 of the Examiner's Answer). However, claim 2 actually recites that "said exchanger is a circular exchanger **suitable for enveloping said seal.**" The Examiner purported response does not provide a credible rebuttal for the Appellants' arguments that the features recited in claim 2 are not anticipated by Lorenzen, parsing the recited feature and ignoring at least the above-emphasized features. An incomplete circle is not configured to "envelope" a seal, and the heat exchanger in Lorenzen does not (or is not configured to) envelope the seals thereof or other component.

The Examiner's answer fails to provide any response to Appellants arguments relative to claims 3, 4, 6, and 7, or, in alternative to indicate that the claims recite patentable subject matter.

In view of the above and of the Arguments in the Appeal Brief, Appellants respectfully submit that claims 1-13 are neither anticipated by Lorenzen nor rendered obvious by the combination of Lorenzen and Drumm. Reversal of all outstanding rejections is therefore respectfully requested.

Respectfully submitted,

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